Air Quality Permitting
Statement of Basis

October 23, 2006

Permit No. P-060024

Valley Paving & Asphalt, Inc., Portable

Facility ID No. 777-00086

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AIR QUALITY DIVISION

PUBLIC COMMENT

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Acronyms, Units, and Chemical Nomenclatures

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
^{o}F	degrees Fahrenheit
gr/dscf	grains per dry standard cubic feet
HAPs	hazardous air pollutants
HMA	hot-mix asphalt
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
kW	kilowatt
lb/hr	pound per hour
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PCB	polychlorinated biphenyl
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	prevention of significant deterioration
PTC	permit to construct
PTE	potential to emit
RAP	recycled asphalt pavement
S	sulfur
SIC	Standard Industrial Classification
SM	synthetic minor
SO_2	sulfur dioxide
TAP	toxic air pollutant
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose of this PTC is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, Procedures and Requirements for Permits to Construct. This permit to construct (PTC) replaces PTC 777-00086, dated June 10, 1993, for the Valley Paving & Asphalt, Inc. hot-mix asphalt (HMA) facility.

2. FACILITY DESCRIPTION

The facility is a portable, hot-mix asphalt plant. Aggregate, sand and asphalt chips (RAP or recycled asphalt product) are transferred to feed bins, then conveyed to the 70 mmBTU per hour oil-fired, parallel flow, drum mix dryer. Heated asphalt oil from a storage tank is then introduced to the middle of the drum unit, and mixed with the aggregate. The resulting asphalt product is then transferred to a storage silo via an enclosed slat conveyor, and held until it is later loaded into to trucks and hauled offsite.

Electrical power for the plant is provided by the local power grid. The asphalt drum mix dryer is fueled by used oil and No. 2 fuel oil.

Drum mix asphalt plants may be of either parallel flow design or the counterflow design. In either design, aggregate (gravel) is dried in the drum and mixed with liquid asphalt cement to produce hot-mix asphalt which is used primarily for road and parking lot construction. The production of hot-mix asphalt includes aggregate handling operations which may include front end loaders, storage bins, conveyance systems, stock piles and haul trucks.

3. FACILITY / AREA CLASSIFICATION

The Valley Paving & Asphalt, Inc. facility is defined as a Synthetic Minor (SM) facility because some criteria pollutant emissions could exceed 100 T/yr, and total HAPs emissions could exceed 25 T/yr, without limits on the facility's potential to emit. The facility is not a Prevention of Significant Deterioration (PSD) major source because emissions do not exceed the PSD threshold of 250 T/yr. The SIC code defining the facility is 2950 (Asphalt Paving Mixtures and Blocks). The AIRS classification is for the facility is "SM".

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant for the Valley Paving & Asphalt, Inc. portable HMA facility. This information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

Valley Paving & Asphalt, Inc. operates a portable HMA plant that was previously permitted to use a Aesco parallel flow drum-mix asphalt plant (Burner model SJ360) with a maximum rated heat input of 70 million British thermal units per hour (MMBtu/hr), and a maximum rated output of 200 tons of HMA per hour, with a maximum of 1,400 hours per year (280,000 tons of produced asphalt per year), fired using ASTM Grade 2 fuel oil. Particulate matter (PM) emissions from the drum dryer were described as being vented to a wet venturi scrubber (Model GB200 VWS), with a water flow of 60-140 gpm, pressure drop of 12-15 inches of water, an air flow rate of 28,000 acfm and an exhaust temperature of 140 degrees Fahrenheit (^{o}F). Electrical power has been provided by the local utility grid.

DEQ issued a Consent Order to the facility, signed August 9, 2006, as a result of five violations documented from an October 19, 2005 inspection of the facility. The Consent Order required the facility to comply with the existing permit by controlling fugitive dust and keeping records of such, by operating at the existing permitted production limit of 200 T/hr, and by combusting No. 2 fuel oil exclusively. In order for the facility to increase hourly production and combust used oil in addition to No. 2 fuel oil, the facility would need to modify the current PTC, as mentioned in the consent order.

On May 31, 2006, DEQ received a PTC application from Valley Paving & Asphalt, Inc. requesting to increase hourly asphalt production rate from 200 tons per hour to 300 tons per hour and to combust used oil in addition to No. 2 fuel oil in the drum dryer burner.

According to Chris Seubert (Valley Paving & Asphalt, Inc. President), the HMA plant is rated at 200 T/hr, but is capable of more asphalt production per hour when raw product conditions are favorable for such (i.e. if aggregate is very dry initially, less dry time from the drum dryer is needed, allowing for additional production at a faster rate).

The facility has requested a 100 T/hr increase to total 300 T/hr throughput. It is unlikely that the HMA will operate at 300 T/hr on a regular basis since the facility's annual production hours remain limited to 1,400 and annual asphalt throughput is limited to 280,000 T/yr. The increase in hourly throughput will simply allow the facility to produce asphalt more quickly at times when raw product conditions are favorable and demand for asphalt is high.

Table 4.1 shows the comparison of the existing permitted operations and the changes proposed in this PTC.

Table 4.1 SUMMARY OF EXISTING PERMITTED OPERATIONS AND PROPOSED CHANGES

Operation/Process	Existing Permit No. 777-00086	Proposed Changes
Production	200 tons per hour	300 tons per hour (100 tons per hour increase)
Drum Dryer Fuel	#2 Fuel Oil	#2 Fuel Oil and used oil with 0.5% sulfur content limit

4.1 Application Chronology

May 31, 2006	DEQ received the PTC application.
June 7, 2006	DEQ requested and received additional information regarding the used oil sulfur content and specifications to be used at the facility.
June 30, 2006	PTC application determined complete.
July 14, 2006	Public notice for an opportunity for a public comment period began.
August 9, 2006	Additional information was requested from the applicant's consultant.
August 14, 2006	Public opportunity for a public comment period closed. A public comment period was requested.
August 22, 2006	Draft permit was sent to Boise Regional Office for comments. Several comments were received and incorporated into the permit.
August 29, 2006	Draft permit sent to facility for review and comment.
September 14, 2006	DEQ received a request from the facility to extend review time to September 29, 2006 for the draft permit.

September 29, 2006 DEQ received comments from the facility on the draft permit. Most of the comments received were incorporated into the permit. The comments which were not incorporated into the permit were beyond the scope of this PTC.

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

5.1 Equipment Listing

HMA Plant:

Manufacturer:	Aesco
Burner Model:	SJ360
Type of HMA plant:	Parallel flow
Rated heat input capacity:	70 MMBtu/hr drum dryer

Wet Venturi Scrubber:

Manufacturer:	AESCO
Model:	GB200 VWS

Associated Storage Equipment:

Asphalt Storage Tank:	15,000 gallon capacity
Distillate Fuel Oil Tank:	8,000 gallon capacity
Used Oil Fuel Tank:	8,000 gallon capacity

5.2 Emissions Inventory

The facility's consultant has provided an emissions inventory for criteria pollutants, hazardous air pollutants (HAPs) and state-only toxic air pollutants (TAPs). Emission estimates were based on emission factors from AP-42 Section 11.1, Hot Mix Asphalt Plants, March 2004. AP-42 emissions factors for drum mix asphalt plants are not dependent on whether the drum mix plant is a parallel flow or counterflow design. Consequently, emissions estimates developed for the drum mix plant would be applicable for either parallel flow drum mix plants or for counter flow drum mix plants. The emissions inventory is included in Appendix B.

Facility Design and Operational Limits

Emission estimates from the HMA plant were based on the operational limits shown in Table 5.1.

Table 5.1 OPERATIONAL CONSTRAINTS USED FOR EMISSION ESTIMATES

Emission Unit	Throughput or Fuel Usage		Hours of Operation	
Drum Dryer	Throughput: 300 T/hr	Throughput: 280,000 T/yr	24 hours/day	1,400 hours/yr

T/hr = tons per hour
T/yr = tons per year

Emissions for Multiple Fuel Types

The emission units and fuels evaluated for this PTC are summarized in Table 5.2. Emissions estimates were calculated separately for each fuel evaluated for use in the HMA. An emission estimate for each emission source was then developed by selecting the maximum value for each pollutant for any fuel type evaluated for that source. This represents a worst-case approach for conservatively evaluating the maximum potential emissions from each source regardless of which fuel type(s) the facility chooses to use.

Table 5.2 EMISSION SOURCES, FUEL TYPES, AND EMISSION FACTORS

Emission Source	Fuel Type(s) Evaluated	Emission Factor Source
HMA Drum Dryer with Wet Venturi Scrubber	Distillate Fuel Oil	AP-42, Section 11.1
	Used Oil (max 0.5% S)	AP-42, Section 11.1

PTC Change in Emissions

Only the changes in estimated emissions are required to be demonstrated in the PTC resulting from:

- Burning used oil with a sulfur content limit of 0.5% in the drum dryer in addition to distillate fuel oil.
- Operating at a 100 tons per hour increase in asphalt production (the annual hours of operation of 1,400 hours and annual asphalt production of 280,000 tons per year remains unchanged).

The emissions estimates needed only to be based on the change in hourly throughput (100 T/hr) requested in the PTC. However, to be conservative, the applicant's consultant estimated emissions for No. 2 fuel oil and used oil on the total emissions of 300 T/hr rather than only the change in emissions of 100 T/hr. The detailed emission estimates are included in Appendix B. The emissions for used oil are the same as No. 2 fuel oil, except for SO_2 and 13 additional pollutants as discussed in the following section. Therefore, the emissions inventory for used oil will be the worst-case scenario.

Additional Pollutants for Used Oil

Used oil burned for energy recovery must meet specifications as listed in Permit Condition 3.6. Permit Condition 3.22 requires a used oil certification to demonstrate compliance with the specifications. A copy of the used oil certification for the facility is included in Appendix D. The used oil specifications and certification requirements ensure that only the pollutants accounted for in the emissions inventory are actually emitted.

Based on AP-42 Section 11.1 emission factors, emissions of non-criteria pollutants in pounds per hour from the drum dryer are expected to be the same whether using distillate fuel oil or used oil, except that 13 additional pollutants are emitted when using used oil. Four of these additional pollutants—benzaldehyde, butyraldehyde, hexanal, and isovaleraldehyde—represent additional emissions of organic compounds, but are neither federally regulated HAPS nor Idaho TAPS. The emissions of the remaining nine new pollutants—all of which are regulated as Idaho TAPS, five of which are also federally regulated HAPs—are shown in Table 5.3, and represent new TAPs emissions associated with this PTC. The emissions estimates from the additional used oil pollutants were based on 300 T/hr as the change in emissions. Additionally, AP-42 has a different emission factor for SO_2 when combusting used oil in the drum dryer (0.058 is the EF for SO_2 for used oil; 0.011 is the EF for SO_2 for ASTM Grade 2 fuel oil). Therefore, SO_2 emissions are estimated to be higher when burning used oil.

Table 5.3 ADDITIONAL REGULATED EMISSIONS FROM COMBUSTING USED OIL

Pollutant	Drum Dryer Used Oil (lb/hr)
SO_2 [a]	17.4
Hydrogen chloride (HCl)	0.06
Non-Polycyclic Aromatic Hydrocarbon Hazardous Air Pollutants (non-PAH HAPs)	
Acetaldehyde	0.390
Acrolein	0.0078
Methyl Ethyl Ketone	0.0060
Propionaldehyde	0.0390
Quinone	0.0480
Non-HAP Organic Compounds	
Acetone	0.249
Crotonaldehyde	0.0258
Valeraldehyde	0.0201

[a] SO_2 was included in the table because the emission factor is different for used oil than for No. 2 fuel oil.

5.3 Modeling

A technical review of the submitted air quality analyses submitted with the application was conducted by DEQ. DEQ also performed an independent, more thorough and refined dispersion modeling analyses to evaluate potential impacts of the HMA facility. The refined analyses included facility-wide emissions from the asphalt plant and also included potential impacts from a concrete batch plant and a rock crusher which operate within close proximity of the HMA plant.

DEQ concluded that the ambient air impact analyses demonstrated that emissions from the increase in pollutants from the facility modification will not cause or significantly contribute to a violation of any air quality standard.

Details and results from DEQ's dispersion modeling analyses are included in Appendix C.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201.....Permit to Construct Required

The modification to Valley Asphalt & Paving's portable hot-mix asphalt facility does not meet the permit to construct exemption criteria contained in sections 220 through 223 of the Rules. Therefore, a modified PTC is required.

IDAPA 58.01.01.209.03.....Ambient Air Quality Standards

This facility has demonstrated to DEQ's satisfaction that its emissions will not cause or contribute to a violation of any ambient air quality standard. As long as Valley Paving & Asphalt complies with the terms and conditions of the permit, all applicable air quality standards will be met.

40 CFR 60, Subpart I .....New Source Performance Standards

Valley Paving & Asphalt's portable hot-mix asphalt plant is an affected facility in accordance with 40 CFR 60.90. An initial performance test was conducted in 1993 and demonstrated compliance with the NSPS standard of .04 gr/dscf and the visible emissions standard of less than 20% opacity..

40 CFR 279 .....Standards for the Management of Used Oil

Part 279.11 contains specifications for used oil which include allowable levels for arsenic, cadmium, chromium, lead, the flash point, and total halogens. The limit for total halogens is listed at 4,000 ppm maximum. However, used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under § 279.10(b)(1). Such used oil is subject to subpart H of part 266 of this chapter rather than this part when burned for energy recovery unless the presumption of mixing can be successfully rebutted. Therefore, the permit limits the total halogens to 1,000 ppm. This permit condition is consistent with previous permits issued for hot-mix asphalt plants[1].

Permit Condition 3.5 states that, in accordance with 40 CFR 279.11, used oil burned for energy recovery shall not exceed any of the allowable levels of the constituents and property listed in Table 5.4. These permit conditions are considered reasonable permit conditions because they inherently limit air pollution emissions.

TABLE 5.4 USED OIL SPECIFICATIONS[1]

Constituent/property	Allowable Level for On Specification Used Oil
Arsenic	5 ppm[2] maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100°F minimum
Total halogens	1,000 ppm maximum
PCBs[3]	< 2 ppm

[1]The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see 40 CFR 279.10(b)).
[2]Parts per million
[3]Applicable standards for the burning of used oil containing PCBs are imposed by 40 CFR 761.20(e)

This table is based on Table 1 from 40 CFR 279.11, incorporating the 1,000 ppm limit for total halogens as explained above.

DEQ's Waste Program has reviewed and approved the above discussions regarding regulating used oil.

IDAPA 58.01.01.210……..Demonstration of Preconstruction Compliance with Toxic Standards

The TAP requirements for PTCs are specified in IDAPA 58.01.01.210. TAPs emissions increases from a modification that exceed screening emission levels (ELs) of IDAPA 58.01.01.585 or 586 must have an ambient impact assessment for the increase in emissions. Compliance with these TAP requirements are demonstrated if the results of the ambient impact estimate for the applicable TAPs are below Acceptable Ambient Concentrations (AACs) for non-carcinogens of TAPs listed in IDAPA 58.01.01.585 or Acceptable Ambient Concentrations for Carcinogens (AACCs) for carcinogenic TAPs listed in IDAPA 58.01.01.586.

[1] PTC-030138 Interstate Concrete, Hayden Lake, 2/18/05 & PTC-040101 Interstate Concrete, Rathdrum, 2/18/05

The change in the facility's estimated toxics emissions from this PTC include nine additional TAPs that are emitted when using used oil instead of distillate fuel oil in the drum dryer. Additionally, the change in existing TAPs emissions was based on an increase of 100 tons per hour (from 200t/hr to 300t/hr). The annual production of 280,000 tons was not increased, therefore, the only annual increase in TAPs resulted from the nine additional TAPs emitted from the burning of used oil.

Compliance with applicable TAP increments were demonstrated by modeling uncontrolled TAP emissions increases resulting from the facility modifications (the TAPs emissions calculated as uncontrolled was a conservative inventory since the facility uses a wet venturi scrubber is used as a control device). TAPs that exceeded the EL were modeled and were determined to be below their respective AACs or AACCs. The toxic air pollutant emissions inventory can be seen in Appendix B and results of toxic air pollutant modeling can be seen in the Modeling section of this document (Section 5.3) and Appendix C.

Compliance with IDAPA 58.01.01.210 has been demonstrated by the facility to DEQ's satisfaction. In accordance with IDAPA 58.01.01.203.03, preconstruction compliance with IDAPA 58.01.01.161 has also been demonstrated. In addition to the demonstrated compliance with the toxic standards discussed in this section, production limits have been set in the PTC to protect human health and the environment.

5.5 Permit Conditions Review

This section describes permit conditions that have been renumbered, modified or deleted as a result of this permit action. The modified PTC has been reformatted, includes new requirements and conditions specific to the processes at the facility. Additionally, the General Provisions have been updated in the modified PTC.

Specific permit condition changes are detailed below. "Existing Permit Condition" refers to conditions in Permit No. 777-00086 issued June 10, 1993. "Modified Permit Condition" refers to conditions in this modified PTC. Most of the modified permit conditions have been renumbered from those in the existing permit, and have been slightly changed/updated to include additional rules and requirements that are now applicable. "New Permit Condition" refers to new conditions in this PTC, which were not included in the existing permit. "The modified PTC" refers to this permit, PTC No. P-060024.

Modified Permit Conditions

Existing Permit Conditions 1.1 through 1.4 contain the process and control descriptions, equipment and stack specifications.

Modified Permit Conditions 1 through 2.2 contain the purpose of the PTC, emission sources, process and emissions control description.

Existing Permit Conditions 2.1.1 and 2.1.2 contain emission limits for criteria pollutants.

Modified Permit Condition 3.1 contains emission limits for PM, PM_{10} and CO. CO emissions are included because it is the criteria pollutant with the highest T/yr emissions for the facility as shown in the emissions inventory supplied by the applicant's consultant (Appendix B).

Existing Permit Conditions 2.1.3 and 2.3 contain visible emissions limits for the asphalt scrubber stack and asphalt oil storage tank, respectively.

Modified Permit Condition 3.2 contains visible emissions limits for any stack, vent, or other functionally equivalent opening.

Existing Permit Condition 2.2 contains fugitive emissions requirements.

Modified Permit Condition 3.4 contains fugitive emissions requirements and reasonable precautions to prevent PM from becoming airborne.

Existing Permit Condition 2.4 requires sulfur content of No. 2 fuel oil not to exceed 0.5 percent.

Modified Permit Condition 3.7 requires sulfur content of ASTM Grade 1 fuel oil not to exceed 0.3% by weight and ASTM Grade 2 fuel oil not to exceed 0.5% by weight. This PTC allows the use of distillate fuel oil, which includes both ASTM Grades 1 and 2, which must meet the respective sulfur percentage limits in accordance with IDAPA 58.01.01.728.

Existing Permit Condition 3.1 requires the permittee to install, calibrate, maintain and operate a monitoring device for continuous measurement of the change in pressure across the wet venturi scrubber throat.

Modified Permit Condition 3.10 incorporates existing Permit Condition 3.1.

Existing Permit Condition 3.1.1 requires recording pressure drop across the wet venturi scrubber throat once per week while the plant is operating at normal capacity.

Modified Permit Condition 3.20 includes required monitoring and recording of the pressure drop across the wet venturi scrubber throat once per day while the plant is operating at normal capacity.

Existing Permit Condition 3.1.2 requires the wet venturi scrubber monitoring device for pressure drop to be certified by the manufacturer and calibrated at least once annually.

Existing Permit Condition 3.1.3 requires wet venturi scrubber maintenance when visible emissions exceed 10 percent opacity more than three minutes in any 60 minute period.

Existing Permit Condition 3.2.2 requires the wet venturi scrubber monitoring device for flow rate to be certified by the manufacturer and calibrated at least once annually.

Modified Permit Condition 3.11 incorporates general requirements of existing permit conditions 3.1.2, 3.1.3 and 3.2.2 by requiring the permittee to develop and follow an operations and maintenance manual based on manufacturer’s information, recommendations, and to include equipment inspection checklists and frequency of inspections.

Existing Permit Condition 3.2 requires the permittee to install, calibrate, maintain and operate a monitoring device for continuous measurement of the water flow rate to the wet venturi scrubber.

Modified Permit Condition 3.10 incorporates existing Permit Condition 3.2.

Existing Permit Condition 3.2.1 requires recording water flow rate of the wet venturi scrubber once per week while the plant is operating at normal capacity.

Modified Permit Condition 3.19 includes required monitoring and recording of wet venturi scrubber water flow rate once per day while the plant is operating at normal capacity.

Existing Permit Condition 3.3 requires the permittee to conduct a performance test for PM emissions from the scrubber stack in accordance with 40 CFR Part 60, Subpart I and DEQ’s procedures.

Existing Permit Conditions 3.4 through 3.4.5 list the data required to be monitored and recorded during the performance testing.

Modified Permit Condition 3.21 requires performance testing for PM emissions from the scrubber stack in accordance with 40 CFR Part 60, Subpart I and DEQ’s procedures also, as well as to test at least once every five years to demonstrate compliance. The five year testing requirement was included based on

requirements for other asphalt plants, complaint history, quantity of emissions and internal source testing guidelines. Data to be monitored and recorded remains unchanged and is included in modified permit condition 3.21.

Existing Permit Conditions 3.5 through 3.5.3 list monitoring and recording requirements for fugitive dust control.

Modified Permit Condition 3.20 requires the permittee to conduct monthly, facility-wide inspections for fugitive emissions and to record and retain records of the inspections.

Existing Permit Condition 4.1 limits the hourly production rate to 200 tons of asphalt per hour and no more than 280,000 tons of asphalt per year.

Modified Permit Condition 3.8 limits the hourly production rate to 300 tons of asphalt per hour (a 100 ton per hour increase). Annual asphalt tons remain limited to 280,000 tons. The applicant has successfully demonstrated that the hourly increase in production rate complies with all applicable air quality standards.

Existing Permit Condition 4.2 limits hours of operation to 1400 hours per year. This condition is unchanged and listed as 3.9 in the modified PTC.

Existing Permit Condition 4.3 allows the drum-mix asphalt plant to be fired by No. 2 fuel oil.

Modified Permit Condition 3.5 allows the plant to be fired by used oil or No. 2 fuel oil as requested in the PTC application.

Existing Permit Condition 4.4 requires the wet venturi scrubber to be operated at all times during the operation of the drum dryer. This has been incorporated as 3.14 in the modified PTC.

Existing Permit Condition 4.5 requires the wet venturi scrubber pressure drop to remain within 30 percent of recent recorded performance test values.

Modified Permit Condition 3.12 requires the wet venturi scrubber pressure drop to be maintained within manufacturer and O&M manual specifications.

Existing Permit Condition 4.6 requires the permittee to apply an environmentally safe chemical soil stabilizer to haul roads.

Modified Permit Condition 3.4 requires reasonable control of fugitive emissions in accordance with IDAPA 58.01.01.650-651.

Existing Permit Condition 4.7 requires suspension of operations during any air stagnation advisories when operating in a nonattainment area. This condition was deleted since the facility cannot operate in a nonattainment area under this PTC.

Existing Permit Condition 4.8 requires asphalt equipment to be set back at least 140 feet from any property boundary. This condition was deleted because modeling was based on receptors closer than 140 feet from the property boundary.

Existing Permit Conditions 5.1 and 5.2 are performance test requirements. These requirements are included in General Provision 6 in the modified PTC and also through reference to IDAPA 58.01.01.157 in modified Permit Condition 3.21.

Existing Permit Condition 5.3 requires the permittee to record hours of operation, monitoring results in a monthly report and retain records for a two year period for pressure change and water flow rate related to the wet venturi scrubber.

Modified Permit Condition 3.19 includes the requirements listed in existing permit condition 5.3.

Modified Permit Condition 3.13 requires the permittee to maintain scrubbing media flow rate within manufacturer and O & M manual specifications.

Existing Permit Conditions 5.4 through 5.4.3 list specific relocation requirements for the portable facility.

Modified Permit Condition 3.25 includes the relocation requirements and a link to registration forms.

Existing Permit Condition 5.5 requires DEQ approval to operate in a nonattainment area.

Modified Permit Condition 4 requires a PTC application to be submitted to DEQ for the facility to operate in a PM_{10} Nonattainment area.

Existing Permit Condition 5.6 requires DEQ approval of all chemical dust suppressants prior to use. This condition was deleted. Chemical dust suppressants applied would need to meet any applicable regulations as alluded to in General Provision 4 in the modified PTC.

New Permit Conditions

Several new conditions have been added as a result of the PTC requests, facility compliance history and complaint information. The following new permit conditions have been added to the modified PTC:

New Permit Condition 3.3 addresses odors. The existing permit does not specifically include odor requirements as a permit condition. This condition was added for compliance with IDAPA 58.01.01.775 and 776 which are applicable to the facility.

New Permit Condition 3.6 limits the amount of lead, arsenic, cadmium, chromium, volatiles, halogens, and PCBs that may be present in any used oil burned for energy recovery. Required used oil limits are listed as imposed by 40 CFR 279.11.

New Permit Condition 3.15 addresses collocation. The existing permit does not address collocation. The modified PTC prohibits collocation with any other HMA plant.

New Permit Condition 3.16 requires the permittee to maintain records of all odor complaints received and lists required record contents. This condition was added as a result of new permit condition 3.3.

New Permit Condition 3.17 requires an odor management plan to be developed within 30 days of permit issuance. This new permit condition was included in the modified PTC based on comments and complaints from the public regarding odors originating from the facility, increased hourly production and alternate used oil combustion as requested in the modified PTC.

New Permit Condition 3.18 requires the use of odor control additives and odor control equipment to be used when the HMA plant is operating. This condition was added as a result of concerns from numerous residents living near the HMA plant.

> The following websites have information regarding additives and equipment for control of asphalt odor:
>
> www.odorsolutions.com
>
> www.asphaltsolutions.com
>
> www.midwescofilter.com
>
> www.odormanagement.com

Note: The list of websites above is not a restrictive or complete list, and is included as a starting point for the permittee. The permittee may find effective products from other vendors or manufacturers. Idaho DEQ does not approve or disapprove of the companies or associated products from the websites listed above. It is the responsibility of the permittee to find effective additives and control equipment for odor control.

Effectiveness of the odor control solutions at the HMA plant will be determined in part by the public from number of odor complaints received by the facility and DEQ, DEQ representative general opinion during inspections/site visits, and actual odor complaint response by DEQ representatives (in accordance with the Idaho DEQ odor policy). If DEQ determines that the odor control solutions are not effective, other alternatives for odor control shall be incorporated as soon as practical. An actual percentage in reduction of odors from using the odor control additive(s) and equipment has not been established.

New Permit Condition 3.22 requires obtaining certification that used oil meets specifications as listed in new permit condition 3.6 and to maintain certification records on site for the most recent two years.

New Permit Condition 3.23 requires maintaining records showing the sulfur content of fuel oil on an as-received basis.

New Permit Condition 3.24 requires the permittee to submit semiannual reports to DEQ summarizing occurrences or non-occurrences of odor complaints. This condition was added as a result of new permit condition 3.3 and to address ongoing concerns of the public.

6. PERMIT FEES

Valley Paving & Asphalt paid the $1,000 permit to construct application fee as required in IDAPA 58.01.01.224 on May 31, 2006.

A permit to construct processing fee of $1,000 is required in accordance with IDAPA 58.01.01.225, because the increase in emissions from the changes associated with this PTC is less than one ton per year. The processing fee was paid on September 11, 2006.

7. PERMIT REVIEW

7.1 Regional Review of Draft Permit

On August 23, 2006, the Boise Regional Office was provided a draft of the permit and statement of basis for review and comment. Several comments were received and incorporated into the permit as authorized.

7.2 Facility Review of Draft Permit

The facility was provided the draft permit for review on August 29, 2006. The facility responded with comments on September 29, 2006. The comments were incorporated into the permit.

7.3 Public Comment

An opportunity for public comment period on the PTC application was provided from July 14 through August 14, 2006, in accordance with IDAPA 58.01.01.209.01.c. During this time, DEQ received several comments on the application, and a public comment period for the PTC was requested.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, DEQ staff recommends that PTC No. P-060024 be provided for public comment as required by IDAPA 58.01.01.209.01.c.

TD/bf P-060024

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APPENDIX A

AIRS INFORMATION

Valley Paving & Asphalt

Facility ID No. 777-00086

P-060024

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Facility Name: Valley Paving & Asphalt, Inc.
Facility Location: Portable
AIRS Number: 777-00086

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2	SM							U
NO_x	SM							U
CO	SM							U
PM_{10}	SM							U
PT (Particulate)			SM					U
VOC	B							U
THAP (Total HAPs)	SM							
			APPLICABLE SUBPART					
			I					

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

APPENDIX B

EMISSIONS INVENTORY

Valley Paving & Asphalt

Facility ID No. 777-00086

P-060024

Valley Paving & Asphalt
McCall Idaho
Hot Mix Asphalt Plant

Maximum Annual Hours	**1,400**	**hour/yr**
Average Daily Hourly Throughput	**300**	**ton/hr**
Annual Throughput	**280,000**	**ton/yr**

Delta Change in TAP emissions Used oil to Diesel Fuel					**IDEP TAP Standards**									
					Carcinogenic Increments (Annual)					**Non-Carcinogens Increments (24 HR)**				
	EF	Units	Emissions (lb/hr)	Emissions (lb/hr/yr)	URF	EL (lb/hr)	AACC (ug/m3)	El Check	Modeled Limit (ug/m3)[a]	OEL (mg/m3)	EL (lb/hr)	ACC (mg/m3)	El Check	Modeled Limit (mg/m3)[b]
									1.216					**0.001216**
HCl	0.00021	lb/ton HMA	0.063	0.0441						7.5	0.05	0.375	Analyze	5.36E-05
Non-PAH HAPs														
Acetaldehyde	0.0013	lb/ton HMA	3.90E-01	6.23E-02	2.20E-06	3.00E-03	4.50E-01	Analyze	0.076					
Acrolein	0.000026	lb/ton HMA	7.80E-03	1.25E-03						0.25	0.017	0.0125	OK	
Methyl Ethyl Ketone	0.00002	lb/ton HMA	6.00E-03	9.59E-04						590	39.3	29.5	OK	
Propionaldehyde	0.00013	lb/ton HMA	3.90E-02	6.23E-03						0.43	0.0287	0.0215	Analyze	7.58E-06
Quinone	0.00016	lb/ton HMA	4.80E-02	7.67E-03						0.4	0.027	0.02	Analyze	9.33E-06
PAH HAPS														
Non-Hap Organics														
Acetonef	0.00083	lb/ton HMA	2.49E-01	3.98E-02						1780	119	89	OK	
Benzaldehyde	0.00011	lb/ton HMA	3.30E-02	5.27E-03										
Butyraldehyde	0.00016	lb/ton HMA	4.80E-02	7.67E-03										
Crotonaldehyde	0.000086	lb/ton HMA	2.58E-02	4.12E-03						5.7	0.38	0.285	OK	
Hexanal	0.00011	lb/ton HMA	3.30E-02	5.27E-03										
Isovaleraldehyde	0.000032	lb/ton HMA	9.60E-03	1.53E-03										
Valeraldehyde	0.000067	lb/ton HMA	2.01E-02	3.21E-03						175	11.7	8.75	OK	
Metals														
a Modeled concentration from IDEP Model Sum Tab			9.72E-01	1.55E-01				TAP Total	0.076				TAP Total	0.071
b Modeled concentration from IDEP Model Sum Tab multiplied by 1,000 to get mg/m3														

Valley Paving & Asphalt
McCall Idaho
Hot Mix Asphalt Plant

Maximum Annual Hours	**1,400**	**hour/yr**
Average Daily Hourly Throughput	**300**	**ton/hr**
Annual Throughput	**280,000**	**ton/yr**

Valley Paving & Asphalt

McCall Idaho

Hot Mix Asphalt Plant
Used Oil Emissions Drum Mix Hot Asphalt Plant

Pollutant	EF	Units	Emissions (lb/hr)	Emissions (ton/yr)	EF Reference
PM	0.04	grain/dscf	5.5	3.9	Permit
PM-10	0.04	grain/dscf	1.8	1.3	Permit
SO2	0.058	lb/ton HMA	17.4	12.2	AP-42 Table 11.1-7 (3/04) Waste oil-fired Dryer
NOx	0.055	lb/ton HMA	16.5	11.6	AP-42 Table 11.1-7 (3/04) Waste oil-fired Dryer
CO	0.13	lb/ton HMA	39	27.3	AP-42 Table 11.1-7 (3/04) Waste oil-fired Dryer
VOC	0.032	lb/ton HMA	9.6	6.7	AP-42 Table 11.1-8 (3/04) Waste oil-fired Dryer
HCl	0.00021	lb/ton HMA	0.063	0.0441	AP-42 Table 11.1-8 (3/04) Waste oil-fired Dryer

Used Oil

Non-PAH HAPs	EF	Units	Emissions (lb/hr)	Emissions (lb/hr/yr)	EF Reference
Acetaldehyde	1.30E-03	lb/ton HMA	3.90E-01	6.23E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Acrolein	2.60E-05	lb/ton HMA	7.80E-03	1.25E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzene	3.90E-04	lb/ton HMA	1.17E-01	1.87E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Ethylbenzene	2.40E-04	lb/ton HMA	7.20E-02	1.15E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Formaldehyde	3.10E-03	lb/ton HMA	9.30E-01	1.49E-01	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Hexane	9.20E-04	lb/ton HMA	2.76E-01	4.41E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Isooctane (2,2,4-trimethylpentane)	4.00E-05	lb/ton HMA	1.20E-02	1.92E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Methyl Ethyl Ketone	2.00E-05	lb/ton HMA	6.00E-03	9.59E-04	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Propionaldehyde	1.30E-04	lb/ton HMA	3.90E-02	6.23E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Quinone	1.60E-04	lb/ton HMA	4.80E-02	7.67E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Methyl chloroform	4.80E-05	lb/ton HMA	1.44E-02	2.30E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Toluene	2.90E-03	lb/ton HMA	8.70E-01	1.39E-01	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Xylene	2.00E-04	lb/ton HMA	6.00E-02	9.59E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
PAH HAPS					
2-Methylnaphthalene	1.70E-04	lb/ton HMA	5.10E-02	8.15E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Acenaphthene	1.40E-06	lb/ton HMA	4.20E-04	6.71E-05	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Acenaphthylene	2.20E-05	lb/ton HMA	6.60E-03	1.05E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Anthracene	3.10E-06	lb/ton HMA	9.30E-04	1.49E-04	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzo(a)anthracene	2.10E-07	lb/ton HMA	6.30E-05	1.01E-05	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzo(a)pyrene	9.80E-09	lb/ton HMA	2.94E-06	4.70E-07	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzo(b)fluoranthene	1.00E-07	lb/ton HMA	3.00E-05	4.79E-06	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzo(e)pyrene	1.10E-07	lb/ton HMA	3.30E-05	5.27E-06	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzo(g,h,i)perylene	4.00E-08	lb/ton HMA	1.20E-05	1.92E-06	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzo(k)fluoranthene	4.10E-08	lb/ton HMA	1.23E-05	1.97E-06	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Chrysene	1.80E-07	lb/ton HMA	5.40E-05	8.63E-06	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Fluorantheneg	6.10E-07	lb/ton HMA	1.83E-04	2.92E-05	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Fluoreneg	1.10E-05	lb/ton HMA	3.30E-03	5.27E-04	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Indeno(1,2,3-cd)pyrene	7.00E-09	lb/ton HMA	2.10E-06	3.36E-07	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Naphthalene	6.50E-04	lb/ton HMA	1.95E-01	3.12E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Perylene	8.80E-09	lb/ton HMA	2.64E-06	4.22E-07	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Phenanthrene	2.30E-05	lb/ton HMA	6.90E-03	1.10E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Pyreneg	3.00E-06	lb/ton HMA	9.00E-04	1.44E-04	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer

Non-Hap Organics					
Acetone	8.30E-04	lb/ton HMA	2.49E-01	3.98E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Benzaldehyde	1.10E-04	lb/ton HMA	3.30E-02	5.27E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Butane	6.70E-04	lb/ton HMA	2.01E-01	3.21E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Butyraldehyde	1.60E-04	lb/ton HMA	4.80E-02	7.67E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Crotonaldehyde	8.60E-05	lb/ton HMA	2.58E-02	4.12E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Ethylene	7.00E-03	lb/ton HMA	2.10E+00	3.36E-01	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Heptane	9.40E-03	lb/ton HMA	2.82E+00	4.51E-01	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Hexanal	1.10E-04	lb/ton HMA	3.30E-02	5.27E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Isovaleraldehyde	3.20E-05	lb/ton HMA	9.60E-03	1.53E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
2-Methyl-1-pentene	4.00E-03	lb/ton HMA	1.20E+00	1.92E-01	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
2-Methyl-2-butene	5.80E-04	lb/ton HMA	1.74E-01	2.78E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
3-Methylpentane	1.90E-04	lb/ton HMA	5.70E-02	9.11E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
1-Pentene	2.20E-03	lb/ton HMA	6.60E-01	1.05E-01	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
n-Pentane	2.10E-04	lb/ton HMA	6.30E-02	1.01E-02	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Valeraldehyde	6.70E-05	lb/ton HMA	2.01E-02	3.21E-03	AP-42 Table 11.1-10 (3/04) Waste oil-fired Dryer
Metals					
Antimony					
Arsenic	1.30E-06	lb/ton HMA	3.90E-04	6.23E-05	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Barium	2.50E-04	lb/ton HMA	7.50E-02	1.20E-02	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Beryllium	0.00E+00	lb/ton HMA	0.00E+00	0.00E+00	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Cadmium	4.20E-06	lb/ton HMA	1.26E-03	2.01E-04	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Chromium	2.40E-05	lb/ton HMA	7.20E-03	1.15E-03	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Cobalt	1.50E-05	lb/ton HMA	4.50E-03	7.19E-04	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Copper	1.70E-04	lb/ton HMA	5.10E-02	8.15E-03	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Hexavalent chromium	0.00E+00	lb/ton HMA	0.00E+00	0.00E+00	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Lead	5.40E-04	lb/ton HMA	1.62E-01	2.59E-02	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Manganese	6.50E-04	lb/ton HMA	1.95E-01	3.12E-02	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Mercury	0.00E+00	lb/ton HMA	0.00E+00	0.00E+00	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Nickel	1.30E-03	lb/ton HMA	3.90E-01	6.23E-02	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Phosphorus	1.20E-03	lb/ton HMA	3.60E-01	5.75E-02	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Silver	0.00E+00	lb/ton HMA	0.00E+00	0.00E+00	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Selenium	2.40E-06	lb/ton HMA	7.20E-04	1.15E-04	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Thallium	2.20E-06	lb/ton HMA	6.60E-04	1.05E-04	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer
Zinc	1.80E-04	lb/ton HMA	5.40E-02	8.63E-03	AP-42 Table 11.1-12 (3/04) Uncontrolled oil-fired Dryer

APPENDIX C

AIR DISPERSION MODEL

Valley Paving & Asphalt

Facility ID No. 777-00086

P-060024

MEMORANDUM

DATE: October 13, 2006

TO: Tracy Drouin, Air Quality Permitting Analyst, Air Program

FROM: Kevin Schilling, Stationary Source Modeling Coordinator, Air Program

PROJECT NUMBER: P-060024

SUBJECT: Modeling Review for the Valley Paving and Asphalt, Inc. Permit to Construct Application for Modification to their Portable Hot Mix Asphalt Plant Located in McCall, Idaho

1.0 Summary

Valley Paving and Asphalt (Valley Paving), Inc. submitted a Permit to Construct (PTC) application for modifications to their portable hot mix asphalt plant (HMA), currently located in McCall, Idaho. Air quality analyses involving atmospheric dispersion modeling of emissions associated with the modification in operations of the plant were submitted to demonstrate that the modification would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02). Bison Engineering, Inc. (Bison), Valley Paving's consultant, conducted the ambient air quality analyses.

A technical review of the submitted air quality analyses was conducted by DEQ. DEQ also performed an independent, more refined dispersion modeling analyses to evaluate potential impacts of the facility. The submitted modeling analyses in combination with DEQ's staff analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either: a) that predicted pollutant concentrations from emissions associated with the proposed facility were below significant contribution levels (SCLs); or b) that predicted pollutant concentrations from emissions associated with the facility, when appropriately combined with background concentrations, were below applicable air quality standards at all receptor locations. Table 1 presents key assumptions and results that should be considered in the development of the permit.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
Impacts for the facility, as evaluated by Bison, were based on generic modeling analyses conducted by DEQ for a hypothetical HMA facility, with impacts scaled by the proposed production rates.	DEQ developed a generic, streamlined approach for evaluating impacts from HMA plants. This approach was designed to represent impacts associated with a typical HMA plant.
DEQ performed refined analyses based on site-specific characteristics and equipment configurations.	Because of the presence of a ready-mix concrete batch plant and a rock crushing plant, DEQ determined it would be more appropriate to use site-specific modeling analyses, rather than the generic, streamlined approach.
Aggressive control of fugitive emissions associated with material handling were needed to enable facility-wide compliance with PM_{10} standards.	Without using the emission factor for wet suppression, there were numerous modeled concentrations exceeding the 24-hour PM_{10} standard at locations immediately east of the HMA plant (only about 30 meters from the HMA plant).

2.0 Background Information

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance.

2.1.1 Area Classification

The Valley Paving facility will only be located in areas designated as an attainment or unclassifiable for all criteria pollutants. The McCall area is an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), ozone (O_3), and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}).

2.1.2 Significant and Full Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the proposed modification exceed the significant contribution levels (SCLs) of IDAPA 58.01.01.006.90, then a full impact analysis is necessary to demonstrate compliance with IDAPA 58.01.01.203.02. A full impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the National Ambient Air Quality Standards (NAAQS) listed in Table 2. Table 2 also lists SCLs and specifies the modeled value that must be used for comparison to the NAAQS.

Table 2. APPLICABLE REGULATORY LIMITS

Pollutant	Averaging Period	Significant Contribution Levels[a] ($\mu g/m^3$)[b]	Regulatory Limit[c] ($\mu g/m^3$)	Modeled Value Used[d]
PM_{10}[e]	Annual	1.0	50[f]	Maximum 1st highest[g]
	24-hour	5.0	150[h]	Maximum 6th highest[i]
Carbon monoxide (CO)	8-hour	500	10,000[j]	Maximum 2nd highest[g]
	1-hour	2,000	40,000[j]	Maximum 2nd highest[g]
Sulfur Dioxide (SO_2)	Annual	1.0	80[f]	Maximum 1st highest[g]
	24-hour	5	365[j]	Maximum 2nd highest[g]
	3-hour	25	1,300[j]	Maximum 2nd highest[g]
Nitrogen Dioxide (NO_2)	Annual	1.0	100[f]	Maximum 1st highest[g]
Lead (Pb)	Quarterly	NA	1.5[h]	Maximum 1st highest[g]

[a]IDAPA 58.01.01.006.90
[b]Micrograms per cubic meter
[c]IDAPA 58.01.01.577 for criteria pollutants
[d]The maximum 1st highest modeled value is always used for significant impact analysis
[e]Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[f]Never expected to be exceeded in any calendar year
[g]Concentration at any modeled receptor
[h]Never expected to be exceeded more than once in any calendar year
[i]Concentration at any modeled receptor when using five years of meteorological data
[j]Not to be exceeded more than once per year

2.1.3 Toxic Air Pollutant Analyses

Toxic Air Pollutant (TAP) requirements for PTCs are specified in IDAPA 58.01.01.210. If the emissions increase associated with a new source or modification exceeds screening emission levels (ELs) of IDAPA 58.01.01.585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient

impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of IDAPA 58.01.01.585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of IDAPA 58.01.01.586, then compliance with TAP requirements has been demonstrated.

2.2 Background Concentrations

Background concentrations were revised for all areas of Idaho by DEQ in March 2003[1]. Background concentrations in areas where no monitoring data are available were based on monitoring data from areas with similar population density, meteorology, and emissions sources. Default rural/agricultural PM_{10} background concentrations of 73 $\mu g/m^3$ for the 24-hour averaging period and 26 $\mu g/m^3$ for the annual averaging period were used because HMA plants are typically located outside of urban areas. The area in McCall where the plant is currently located is more representative of rural/agricultural areas than urban areas for the purpose of determining background concentrations.

3.0 Modeling Impact Assessment

3.1 Modeling Methodology

DEQ's streamlined dispersion modeling method for HMA plants was used by Bison for this application. This method is described in a March 23, 2006, DEQ memorandum, and is appropriate for HMA plants because of the continual change in the equipment configuration at the site. Emissions sources were located within a 20-meter by 20-meter area, and the ambient air boundary was assumed to be a 100-meter radius from the center of the emissions source area. Modeling for the asphalt loadout, silo loading, and miscellaneous material handling were based on a typical plant layout, a processing rate of 300 tons per hour, and an annual operation rate of 1,000 hours per year. Results were then used to generate dispersion factors as a function of processing and operational rates. Impacts from the main dryer stack were estimated using the screening-level atmospheric dispersion model SCREEN3. Total impacts were calculated by adding the impacts of all individual sources together.

SCREEN3 only generates maximum 1-hour pollutant concentrations. To evaluate concentrations for other averaging periods the following persistence factors were used:

- 1-hour to 24-hour factor = 0.4
- 1-hour to annual factor = 0.08 (a factor of 0.125 is required for carcinogenic TAPs)

DEQ performed refined analyses to evaluate impacts from the HMA plant when combined with impacts of the ready-mix concrete batch plant and the rock crushing plant, also located on the facility's property. DEQ's refined analyses used actual equipment locations to establish emissions points, as shown on a submitted facility plot plan. The remainder of this memorandum focuses on DEQ's refined analyses rather than the generic, streamlined analyses. Table 3 provides a summary of the modeling parameters used in the DEQ refined analyses.

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1 Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling.* Memorandum to Mary Anderson, March 14, 2003.

Table 3. REFINED MODELING PARAMETERS		
Parameter	**Description/Values**	**Documentation/Addition Description**
Model	ISCST3-PRIME	ISCST3 with the PRIME downwash algorithm, version 04269
Meteorological data	1987-1991	Boise surface and upper air data, rotated for McCall conditions
Terrain	Flat	Flat terrain used since maximum impacts are very near the facility
Building downwash	Considered	The building profile input program (BPIP) was used
Receptor Grid	Grid 1	25-meter spacing along boundary out to 150 meters
	Grid 2	50-meter spacing out to 500 meters
	Grid 3	100-meter spacing out to 2,000 meters

3.1.1 Modeling protocol and Methodology

The submitted air impact analyses were conducted by Bison. DEQ was contacted prior to the application submittal, and DEQ recommended use of the streamlined approach. Modeling was conducted using methods and data presented in the March 23, 2006, memorandum and the *State of Idaho Air Quality Modeling Guideline*.

3.1.2 Model Selection

ISCST3 with the PRIME downwash algorithm was used for DEQ's refined modeling analyses. ISCST3 uses actual monitored meteorological data and uses actual locations of emissions units in the evaluation of air pollutant impacts.

3.1.3 Meteorological Data

Surface and upper air meteorological data monitored from Boise, Idaho, were used for the refined modeling analyses. Boise National Weather Service data were used because data from McCall are not suitable as input for running ISCST3. To account for differences between Boise and McCall for the prevailing wind direction, the Boise wind direction values were rotated 35 degrees to the north.

3.1.4 Terrain Effects

Terrain effects on dispersion were not considered in the analyses. Because maximum impacts from the near ground-level sources at the facility are within several hundred meters, terrain effects on maximum modeled impacts are minimal.

3.1.5 Facility Layout

The facility plot plan submitted to DEQ was used to establish the general location of the HMA plant, the ready-mix concrete batch plant, and the rock crusher.

3.1.6 Building Downwash

No buildings of sufficient size to cause plume downwash were identified for the Valley Paving HMA plant. A 10-meter square building, 10 meters tall, was used as a representation of structures associated with the ready-mix cement batch plant.

3.1.7 Ambient Air Boundary

The facility property boundary, as identified on a submitted plot plan, was used as the ambient air boundary for the DEQ refined analyses. DEQ assumed reasonable measures would be taken to ensure the general public is excluded from access to the property.

3.1.8 Receptor Network

Table 3 describes the receptor grid used in DEQ's refined analyses. The receptor grid met the minimum recommendations specified in the *State of Idaho Air Quality Modeling Guideline*. DEQ determined the receptor grid was adequate to reasonably resolve maximum modeled concentrations.

3.2 Emission Rates

Emissions rates used in the generic HMA plant dispersion modeling analyses were based on emissions factors from EPA's AP-42 Section 11.1 (March 2004), *Hot Mix Asphalt Plants*. Emissions increases from the proposed modification were based on the difference between current permit allowables and proposed maximum emissions, considering the allowed change in fuels. The proposed modification will increase short-term processing rates from 200 tons per hour to 300 tons per hour, but will not increase annual production from the current allowable of 280,000 tons per year.

3.2.1 Criteria Pollutant Emissions Rates

For those emissions increases that cause a maximum ambient impact exceeding the SCLs, a full impact analysis was necessary. Facility-wide allowable emissions for the HMA plant were used for the full impact analyses, based on 300 tons per hour and 280,000 tons per year production. Bison's analyses did not account for impacts from the existing ready-mix concrete batch plant and the rock crusher that are typically located on the facility's property.

Table 4 shows the emissions increases at the HMA plant that are associated with this modification. There is no increase in short-term PM_{10} emissions from the dryer because allowable emissions were conservatively based on compliance with the grain-loading standard.

Table 4. INCREASE IN EMISSIONS RATES USED FOR SIGNIFICANT IMPACT MODELING

Emissions Point	Description	Emissions Rates (lb/hr)			
		PM_{10}[a]	SO_2[b]	CO[c]	NOx[d]
ASPSTAK	HMA main stack	0.0	0.0	31.4	1.49[e]
LOAD	HMA asphalt loadout	0.0522	0.0	0.135	0.0
SILO	HMA silo filling	0.0586	0.0	0.118	0.0
CONVEY	HMA conveyors handling aggregate	0.0276	0.0	0.0	0.0

[a] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[b] Sulfur dioxide
[c] Carbon monoxide
[d] Nitrogen dioxide
[e] Annualized emissions (annual emissions divided by 8760 hr/yr)

DEQ's facility-wide analyses included impacts from the ready-mix concrete batch plant and the rock crusher that are typically located at the Valley Paving site. The concrete batch plant is operated by Clearwater Concrete, Inc., and emissions from the storage silo were based on permit allowable rates.

Emissions from other fugitive sources at the plant were based on allowable throughput and emissions factors from EPA's AP-42 Chapter 13.2.4. Emissions from rock crushing operations were based on processing 300 ton/hr and emissions factors from AP-42, Chapter 11.19.2.

Emissions from the handling of aggregate and sand for the cement plant are a function of material moisture content. Because the material moisture content will vary with season, a separate emissions rate for late fall through early spring was developed. Emissions from these sources also vary with windspeed. A base emissions rate was calculated for a 10 mile/hour (mph) wind, and adjustment factors were made for windspeed categories of 1.7 mph, 5.2 mph, 9.2 mph, 15.0 mph, 21.3 mph, and 27.7 mph. The adjustment factors were entered in the model to be used with the appropriate wind speed for the particular hour modeled.

Table 5 lists emissions rates used in the facility-wide modeling analyses. Facility-wide impact analyses were only required for PM_{10} 24-hour averaged concentrations. The impacts from the proposed modification for other criteria pollutants were below SCLs.

Table 5. FACILITY-WIDE EMISSIONS RATES USED FOR MODELING

Emissions Point	Description	Emissions Rates (lb/hr[a])
		PM_{10}[b]
ASPSTAK	HMA main stack	1.8
LOAD	HMA asphalt loadout	0.156
SILO	HMA silo filling	0.176
CONVEY	HMA conveyors handling aggregate	0.0828
CSILO	Cement plant storage silo	0.00668
CTLOAD	Cement plant truck loadout	0.314
CAGGSAND	Cement plant sand/aggregate handling	0.5718 (0.287[c])
CAGSTOR	Cement plant sand/aggregate to elevated storage	0.2859 (0.143[c])
CRTRUK	Crusher aggregate truck unloading	0.0024
CRUSHER	Crusher aggregate conveyors	0.0828
CRSCREEN	Crusher primary screen	0.222
CRTIRTSC	Crusher 3° crusher + screen	0.384

[a] Pounds per hour
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[c] Emissions rate for wet conditions of late fall through early spring

3.2.2 TAP Emissions Rates

Table 6 lists applicable TAP emissions increases associated with the HMA plant modification. There is no increase in carcinogenic TAP emissions for asphalt plant loadout and silo filling because the modification will not increase the annual asphalt production rate. The pound/hour value required for comparison to the EL is an annualized emissions rate for carcinogenic TAPs rather than the maximum short-term pound/hour rate. Emissions of all other TAPs were below applicable screening emissions levels (ELs) and modeling was not required.

Table 6. MODELED TAP EMISSIONS RATES

Pollutant	Averaging Period	Source-Specific Emissions Rates[a] (lb/hr)[b]				
		DRYER	LOAD	SILO	TOTAL	EL
Hydrogen Chloride (HCl)	24-hour	0.063	0.0	0.0	6.3E-2	0.05
Propionaldehyde	24-hour	0.039	0.0	0.0	3.9E-2	0.0287
quinone	24-hour	0.048	0.0	0.0	4.8E-2	0.027
Acetaldehyde	annual	0.0416	0.0	0.0	4.16E-2	0.00300

[a] Values for TAPs with an annual averaging period are annual values divided by 8760 hour/year
[b] Pounds per hour

DEQ also conducted a facility-wide TAP analysis and compared those results to AACs and AACCs. Table 7 provides total TAP emissions rates for sources at the entire facility.

Table 7. FACILITY-WIDE TAP EMISSIONS

TAP	Averaging Period	Emissions Rate[a] (lbs/hr[b])				
		ASPSTAK	LOAD	SILO	CSILO	CTLOAD
Dioxins and furans[c]	Annual	3.26E-9	ND	ND	ND	ND
Polycyclic organic matter	Annual	2.63E-5	1.47E-5	2.90E-5	ND	ND
Acetaldehyde	Annual	6.23E-5	ND	ND	ND	ND
Benzene	Annual	1.87E-2	6.91E-5	4.25E-5	ND	ND
Formaldehyde	Annual	1.49E-1	1.17E-4	9.17E-4	ND	ND
Arsenic	Annual	6.23E-5	ND	ND	8.33E-8	5.97E-5
Beryllium	Annual	ND	ND	ND	9.54E-9	4.79E-6
Cadmium	Annual	2.01E-4	ND	ND	9.54E-9	6.72E-7
Chromium 6+	Annual	2.16E-5	ND	ND	1.14E-7	4.48E-5
Nickel	Annual	6.23E-2	ND	ND	8.21E-7	2.34E-4
HCl	24-hour	6.3E-2	ND	ND	ND	ND
Propionaldehyde	24-hour	3.9E-2	ND	ND	ND	ND
Quinone	24-hour	4.8E-2	ND	ND	ND	ND

[a] Values for TAPs with an annual averaging period are annual emissions values divided by 8760 hour/year. ND indicates no data.
[b] Pounds per hour
[c] TCDD equivalent

3.3 Emission Release Parameters

Table 8 provides emissions release parameters for the DEQ refined analyses including stack height, stack diameter, exhaust temperature, and exhaust velocity.

Table 8. EMISSIONS AND STACK PARAMETERS

Release Point /Location	Source Type	Stack Height (m)[a]	Modeled Diameter (m)	Stack Gas Temp. (K)[b]	Stack Gas Flow Velocity (m/sec)[c]
ASPSTAK	Point	7.3	1.1	333	14.6
CSILO	Point	10	1	Ambient	0.34
Volume Sources					
Release Point /Location	**Source Type**	**Release Height (m)**	**Initial Horizontal Dispersion Coefficient σ_{y0} (m)**	**Initial Vertical Dispersion Coefficient σ_{z0} (m)**	
LOAD	Volume	5	0.70	4.65	
SILO	Volume	7.5	0.70	4.65	
CONVEY	Volume	2.5	7.0	1.2	
CAGSAND	Volume	3.0	11.6	1.4	
CAGSTOR	Volume	5.0	1.16	4.65	
CTLOAD	Volume	5.0	2.33	4.65	
CRUSHER	Volume	5.0	6.98	1.16	
CRTRUK	Volume	2.0	1.16	0.93	
CRSCREEN	Volume	5.0	1.16	1.16	
CRTIRTSC	Volume	5.0	2.33	1.16	

[a] Meters
[b] Kelvin
[c] Meters per second

3.4 Results for Significant and Full Impact Analyses

Results from DEQ's significant impact analyses are shown in Table 9. PM_{10} modeling for the annual averaging period was not required, because annual allowable PM_{10} emissions will not increase. To demonstrate compliance with the 24-hour PM_{10} standard, emissions factors representing wet dust suppression were needed on fugitive emissions from conveyor transfers of aggregate. A full impact analysis was required for 24-hour $PM_{10,}$ because results from the significant impact analysis exceeded SILs. The facility includes the HMA, a ready-mix concrete batch plant, and a rock crusher.

Table 9. SIGNIFICANT IMPACT ANALYSES

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	Significant Impact Level ($\mu g/m^3$)	Full Impact Analysis Required
PM_{10}[b]	24-hour	16.2	5.0	Yes
Carbon Monoxide (CO)	1-hour	399	2,000	No
	8-hour	198	500	No
Nitrogen Dioxide (NO_2)	Annual	0.72	1.0	No

[a] Micrograms per cubic meter
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

The 24-hour PM_{10} full impact analysis included impacts from the concrete batch plant and the rock crusher at the site. Initial model runs did not satisfactorily demonstrate compliance with the 24-hour PM_{10} standard when combined with a default background concentration of 71 $\mu g/m^3$. The primary contributor to the high modeled concentrations were emissions from the concrete batch plant. The modeling analysis was then refined by separating operations into two scenarios. The dry material scenario was run for the late spring through early fall months of May through September. Material handling emissions for this period were calculated using AP-42 default material moisture contents (1.77% for aggregate and 4.17% for sand). Emissions for the moist material scenario, for October through April, were calculated using a material moisture content of two times the default value.

Table 10 shows results for the 24-hour PM_{10} full impact analysis. The maximum sixth-high modeled concentration occurred at a receptor along the road bisecting the facility. This concentration was associated with highest-fourth high modeled concentrations for the moist material scenario. Concentration contours for this scenario are shown in Figure 1, including a 71 $\mu g/m^3$ background concentration.

Table 10. RESULTS FOR PM_{10}[a] 24-HOUR FULL IMPACT ANALYSES

Location	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	Background Concentration ($\mu g/m^3$)	Total Ambient Impact ($\mu g/m^3$)	NAAQS[b] ($\mu g/m^3$)	Percent of NAAQS
All ambient air receptors	24-hour	89.3[d]	73	162.3	150	108
Excluding road segment	24-hour	70.5[e]	73	143.5	150	96

[a] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
[b] Micrograms per cubic meter
[c] National ambient air quality standards
[d] Maximum 6th highest modeled concentration at all ambient air locations, obtained by modeling a five-year meteorological data set
[e] Maximum 6th highest modeled concentration at a location other than the road segment that bisects the facility

Concentrations at all ambient air receptors are below the 150 $\mu g/m^3$ standard, except for a small number of receptors along the road bisecting the Valley Paving facility. All receptors showing 24-hour PM_{10} concentrations over the standard were shown to have impacts below the SCLs for only the emissions increase from the proposed modification (significant impact analysis). Therefore, the proposed modification will not have a significant contribution to an exceedance of an ambient air quality standard.

Also, emissions from fugitive dust sources are highly uncertain and highly variable. Aggressive emissions controls of these sources will assure PM_{10} concentrations remain at levels below applicable standards at all locations.

3.5 Results for TAPs Analyses

Compliance with TAP increments were demonstrated by modeling uncontrolled TAP emissions increases (those TAPs with emissions exceeding the ELs) resulting from modifications made to the HMA plant. Table 11 summarizes the ambient TAP analyses.

Table 11. RESULTS OF TAP ANALYSES

TAP	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	AAC/AACC[b] ($\mu g/m^3$)	Percent of AAC/AACC
Hydrochloric acid	24-hour	0.25	375	0.07
Propionaldehyde	24-hou	0.15	21.5	0.7
Quinine	24-hour	0.19	20	1
Acetaldehyde	Annual	0.076	0.45	17

[a]Micrograms per cubic meter
[b]Acceptable Ambient Concentration or Acceptable Ambient Concentration for a Carcinogen

Results of the facility-wide TAP analyses are shown in Table 12. The corresponding AAC or AACC is shown for each TAP as a reference only. Compliance with the AACs and AACCs are not required for facility-wide emissions; they are increment standards and are only applicable on a project-by-project basis. The analyses of facility-wide TAPs are for informational purposes only.

Table 12. RESULTS OF FACILITY-WIDE TAP ANALYSES

TAP	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	AAC/AACC ($\mu g/m^3$)	Percent of AAC/AACC
Dioxins and furans	Annual	1.43E-9	2.2E-8	7
Polycyclic organic matter	Annual	6.52E-4	3.0E-4	217
Acetaldehyde	Annual	2.74E-2	4.5E-1	6
Benzene	Annual	8.44E-3	1.2E-1	7
Formaldehyde	Annual	6.73E-2	7.7E-2	87
Arsenic	Annual	1.14E-3	2.3E-4	495
Beryllium	Annual	9.14E-5	4.2E-3	2
Cadmium	Annual	8.96E-5	5.6E-4	16
Chromium 6+	Annual	8.57E-4	8.3E-5	1033
Nickel	Annual	2.78E-2	4.2E-3	662
Hydrochloric acid	24-hour	2.14E-1	375	0.06
Propionaldehyde	24-hour	1.33E-1	21.5	0.6
Quinine	24-hour	1.63E-1	20	0.8

[a]Micrograms per cubic meter
[b]Acceptable Ambient Concentration or Acceptable Ambient Concentration for a Carcinogen

Figure 2 shows concentration contours for Chromium 6+ and Figure 3 shows concentration contours for Nickel, both carcinogenic compounds. Although concentrations at some locations exceed the AACCs, most concentrations are within a value of 10 times the AACC, the allowed increment for modifications where Reasonably Available Control Technology for TAPs (T-RACT) is utilized.

The concentration contours for these two TAPs appear substantially different in shape. This is primarily a result from the emissions release parameters. Chromium 6+ emissions occur predominantly from fugitive emissions associated with the ready mix concrete batch plant, while nickel emissions occur mainly from the HMA dryer stack.

4.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the facility will not cause or significantly contribute to a violation of any air quality standard.

Figure 1 - Facility-Wide 24-Hour PM10 Concentrations

Sixth High Modeled Concentrations in Micrograms per Cubic Meter

Including Background Concentration of 71 Micrograms per Cubic Meter

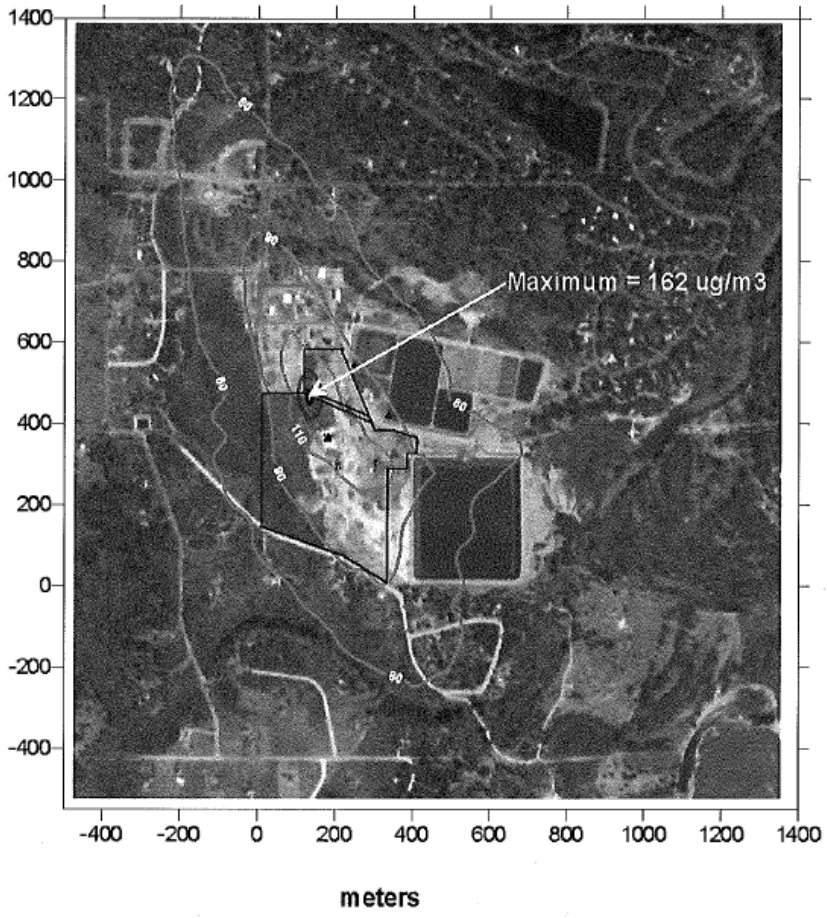


Figure 2 - Facility-Wide Maximum Annual Impacts of Chromium 6+

Concentrations in Micrograms per Cublic Meter

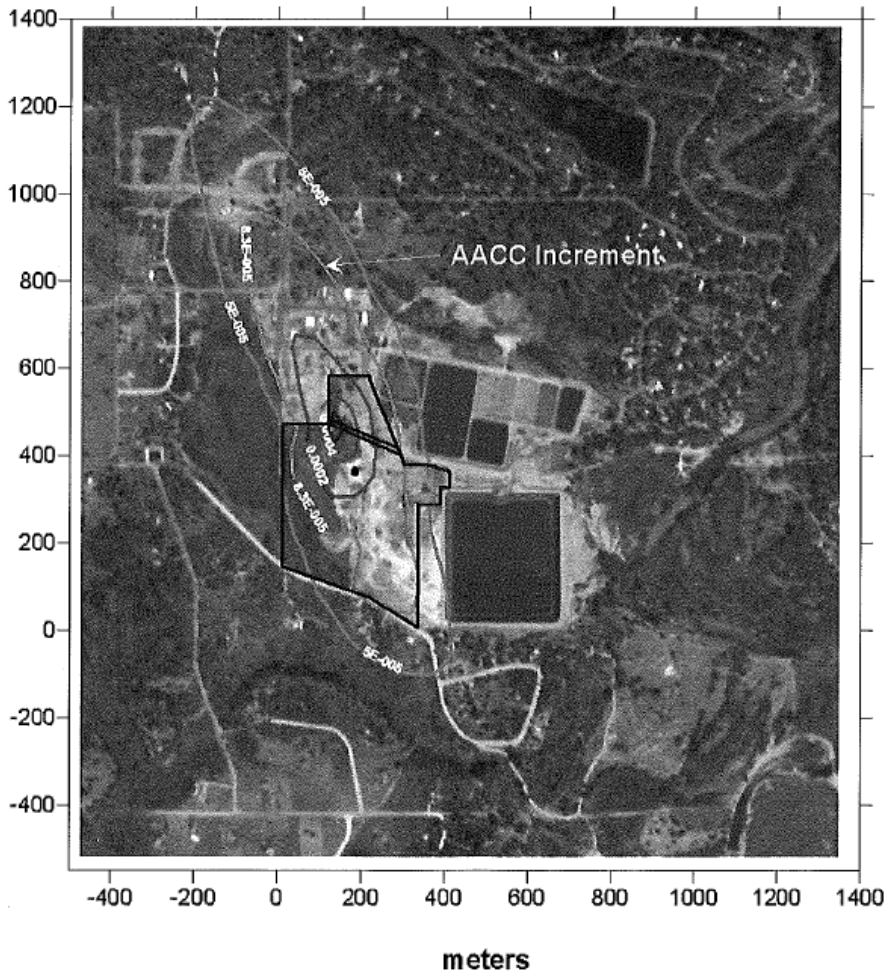
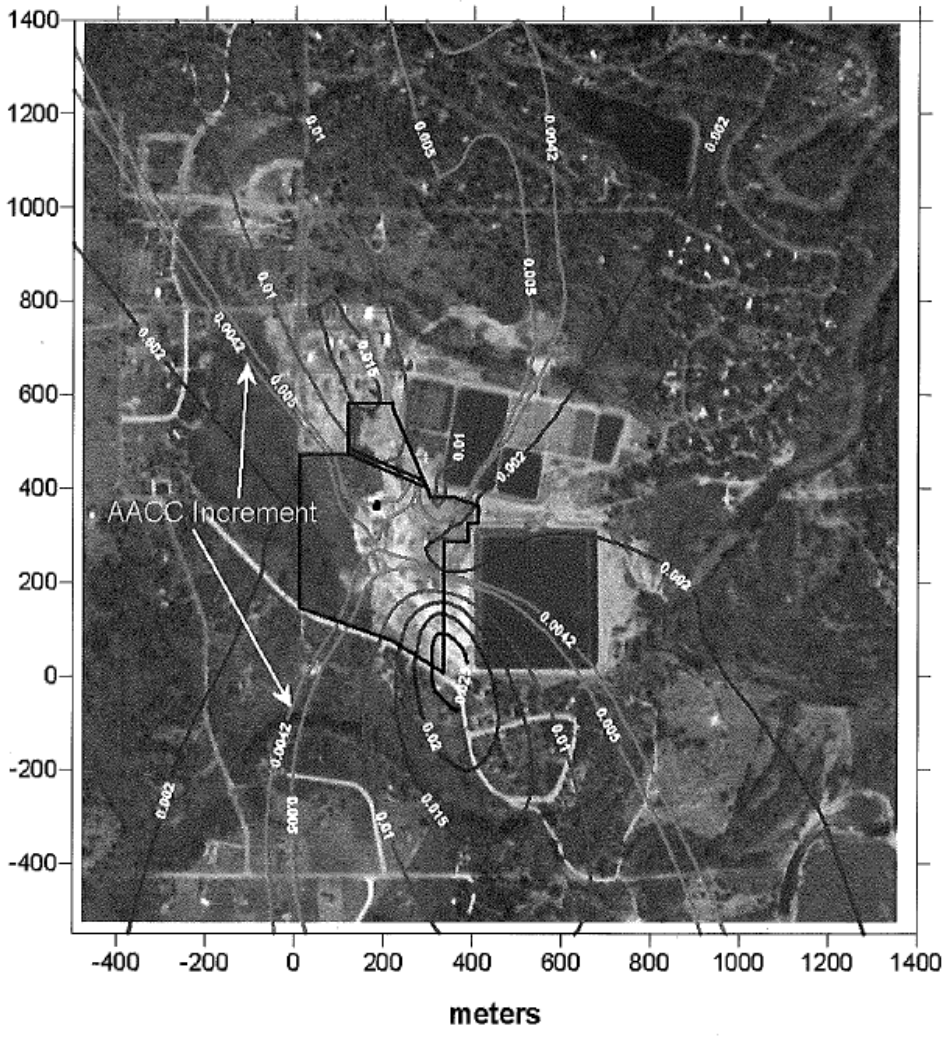


Figure 3 - Facility-Wide Maximum Annual Impacts of Nickel

Concentrations in Micrograms per Cubic Meter



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APPENDIX D

USED OIL CERTIFICATE

Valley Paving & Asphalt

Facility ID No. 777-00086

P-060024

Commercial Fuel Recycling, LLC.
7336 Coral Ct.
Nampa, Id. 83687
Phone# 208-465-5296
Fax# 208-442-2829

Certificate of Analysis

Ship to:	VALLEY PAVING AND ASPHALT, McCall, ID
Ship From:	Commercial Fuel Recycling, LLC.
Date collected:	10/3/2005
Date received:	10/3/2005
Fuel type:	Recycled Fuel Oil
Sample #:	100305-071205-1
Matrix:	Liquid
Lab:	Anateck

Parameter	Method	Result
Arsenic	6010	<5.0ppm
Cadmium	6010	<2.0ppm
Chromium	6010	<10.0ppm
Lead	6010	<100.0ppm
Flash point	6010	>200F
PCB	8082	<2.0ppm
Sulfur	D-4294	<.50
Total halogens	9075	<1000.0ppm

RANDY BLACKBURN

Date 10/3/2005